

## PREVALENCE OF SECRETORY OTITIS MEDIA AMONGST PRIMARY SCHOOL CHILDREN IN BENIN CITY NIGERIA.

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### ABSTRACT

**BACKGROUND:** To determine the prevalence of secretory otitis media amongst primary school children in Benin City, Nigeria,

**METHODS:** A six month prospective study of pupils aged between five and seven years in primary one in the selected schools.

Techniques for data collection were;

Personal Identification,

Otoscopy,

Tympanometry,

Screening Audiometry,

Examination of the nose for presence of anterior rhinorrhea,

Examination of the throat for gross tonsillar enlargement.

**RESULTS:** The results showed the prevalence rate of otitis media to be 15.9% with no significant difference in prevalence between males and females.

**CONCLUSION:** That OME is quite a common condition amongst primary school children in Benin City with resultant hearing impairment and need for a school screening and health programme to detect and prevent this common condition is emphasized.

**KEYWORDS:** secretory otitis, media, children, pupils, Nigeria,

### INTRODUCTION

Secretory otitis media also known as Otitis Media with Effusion (OME) has been identified as the commonest middle ear condition causing deafness in children in developed countries, De 1980. It affects children's learning ability through temporary and recurring hearing loss, permanent hearing impairment and language disorders.

A child with an episode of OME often experiences a mild to moderate fluctuating hearing loss, thus receiving partial or inconsistent auditory cues, which may make speech more difficult to detect and/or filter from background noise. It has been hypothesized that the resulting misperception or missing of words may affect the input to the knowledge base or to the neural substrate on which language learning is built. It also has been proposed that any difficulties attributable to OME associated hearing loss may become evident when a child reaches school age and faces the challenges of school environment.

Academic skills particularly in reading and other language based subjects may be affected when there is a high demand for attention to verbally presented information. Roberts *et al* 2002. Several studies have shown that secretory otitis media also occurs in children in the developing countries even though they are not brought for treatment. Most parents pay attention to suppurative problems of the ear. The conductive hearing loss associated with OME must have been missed by parents and teachers. Okeowo 1985.

This study attempts to address this problem by evaluating the prevalence of Secretory otitis media amongst primary school children in Benin City so that health care policy makers can be sensitized to taking positive steps in combating this morbidity, while taking note of the fact that the prevalence of secretory otitis media varies in different population groups and reports from studies from different parts of the world vary depending on the age group of the children examined. Figures of 10- 60% have been variously reported. Renvall *et al* 1985, Roese *et al* 1977, Tos *et al* 1982

### OBJECTIVES

To determine the prevalence of secretory otitis media amongst primary school children in Benin City.

## MATERIALS AND METHODS

The subjects included in my study were primary 1 pupils in the selected primary schools with age range of 5-7 years. Each ear was considered as a separate entity suitable for analysis.

For tympanometric recordings, a Welch-Allyn Microtympanometer 2 was used with the following specifications

Probe Tone frequency – 226HZ

Sound Pressure level of 85 dB

Pressure range of + 200 to –400 dapa. Fiellau Nikolajsen (1983) modified Jerger's (1970) nomenclature; subdividing tympanograms into 4 types was used.

- Type A - Middle ear pressure + 200 to – 99mm of Water.
- Type B - Flat traces without a well defined compliance.
- Type C<sub>1</sub> - Middle ear pressure – 100 to –199mm of Water.
- Type C<sub>2</sub> - Middle ear pressure – 200 to 400 mm of Water

Types C<sub>1</sub> and C<sub>2</sub> associated with a negative middle ear pressure as in Eustachian tube dysfunction and which is also associated with middle ear effusion as well as the type B flat curve which is highly associated with middle ear effusion were used as indicators of OME.

## RESULTS

The total number of children enrolled in the study was 270.

Each pupil had the 2 ears examined and tested resulting in a total of 540 ears in the study.

The results showed a prevalence rate of 15.9% of OME with no significant difference in the prevalence of OME between males and females.

## DISCUSSION.

In this study, the types C<sub>1</sub> and C<sub>2</sub> as well as the type B tympanograms were used as indicators of OME. These combined gave a prevalence rate of 15.9%; this value was quite close to that of Ijaluola *et al* 2000, 18.6% and 18.2% which was obtained by Nwawolo *et al* 1998, which used the same diagnostic criteria as used in this study. This shows that this condition is quite common, in Nigeria, which is at variance with what Murphy reported in 1981 where he said the condition is relatively uncommon in West Africa.

Due to the difference in diagnostic criteria, comparisons of various studies are a bit difficult. However comparing the results from this study with one earlier done in Benin City by Ogisi 1988, Ogisi used the type B and C tympanograms as an indicator of OME and had a prevalence rate of 8%. The prevalence rate using only the type B in this study was 6.7% which is quite close to that obtained by Ogisi, 5.2% and so much closer to 6.6% which was obtained by Okeowo in 1981.

These results are however still much lower than those reported from developed countries where prevalence rates of up to 64% have been reported, depending on several factors, including the diagnostic criteria, instruments used to detect the condition, age group of the children etc. Renvall 1985, this lower prevalence rate in African children was suggested by Okeowo 1985 to be due to the fact that the Eustachian tube functions better in Africans. While there is little scientific evidence to support this, further investigation in this area is necessary.

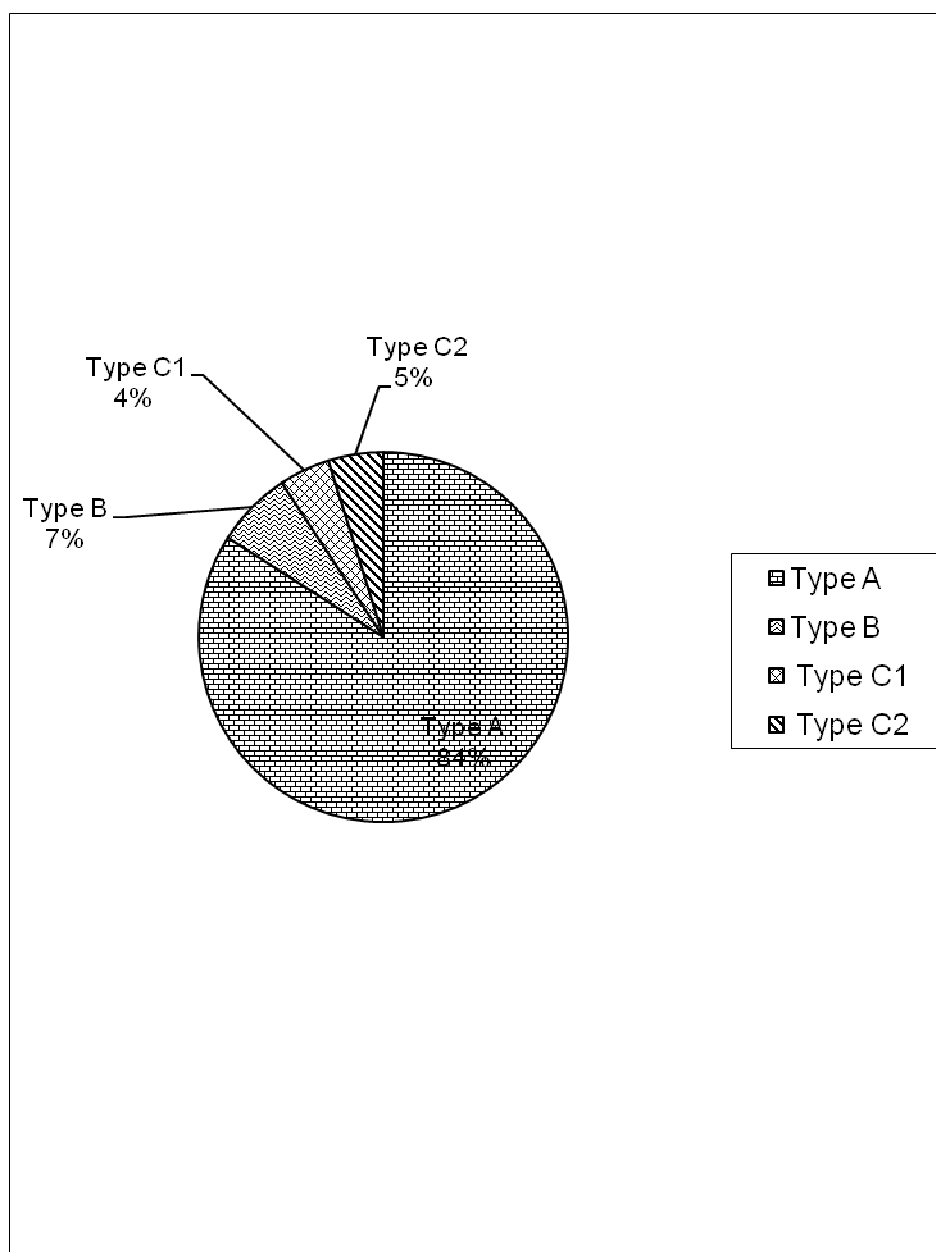


FIGURE 1: DIAGRAM OF TYMPANOMETRIC FINDINGS (540 EARS)

#### CONCLUSION

That otitis media with effusion is quite a common condition amongst primary school children in Benin City and as such parents and teachers should be educated on the prevalence of this condition and advised to watch out for any signs of hearing impairment in a child such as not answering to calls promptly.

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